

APPLICANTS' INTERVIEW SUMMARY RECORD

On January 2, 2003, Applicants' Representative, Phil Blair, USPTO Registration Number 36,750, spoke with Examiner Carter regarding the initial Office Action dated October 1, 2002 that apparently did not consider the Preliminary Amendment of May 30, 2001 and the status of thereof. Examiner Carter informed Applicants' Representative that there was an error on the part of the USPTO's clerk and that the preliminary amendment should've been entered. Examiner Carter further informed Applicants' Representative that since the Preliminary Amendment of May 30, 2001 was not entered, the original claims were mistakenly examined. Lastly, Examiner Carter informed Applicants' Representative that the Office Action dated October 1, 2002 would be withdrawn and another search of the prior art would be conducted prior to an examination of the preliminarily amended new claims; and therefore, a new Office Action on the merits would be forthcoming and no response to the Office Action dated October 1, 2002 is required.

REMARKS

Claims 32-39 are pending in the present application. As respectfully submitted above, claims 1-31 have been cancelled without prejudice or disclaimer to the subject matter contained therein.

A. Rejection of Claims 11-31 under 35 U.S.C. §102(b)

Claims 11-31 have been rejected under 35 U.S.C. §102(b) as being anticipated by Kelly et al. (US-A-5,528,387). This rejection under 35 U.S.C. §102(b) over Kelly et al., to claims 11-31, and as it also may be applied to newly added claims 32-39, is respectfully traversed.

One embodiment of the present invention, as set forth in newly added independent claim 32, is directed to a method for electronically registering an input document. The method generates an image data stream representing a captured image, the captured image including the input document, the image data stream being partitioned into a plurality of scan lines of image data; detects if the scan line of image data contains an edge of the input document and generating leading edge data and trailing edge data therefrom; establishes, when a scan line of image data containing an edge of the input document is detected and no corner of the input document has been established, a first corner of the input document based on the generated leading edge data and trailing edge data corresponding to the scan line of image data containing an edge of the input document; establishes a second corner of the input document from generated leading edge data; and establishes a third corner of the input document from generated trailing edge data.

Moreover, as set forth in newly added independent claim 32, the establishing of the second corner includes determining, after the first corner of the input document has been established and a scan line of image data containing an edge of the input document is detected, if the generated leading edge data is less than a first threshold value, determining if the generated leading edge data represents a corner when it is determined that the generated leading edge data is less than the first threshold value, and establishing the second corner of the

input document based on the generated leading edge data when it is determined that the generated leading edge data represents a corner.

Furthermore, as set forth in newly added independent claim 32, the establishing of the third corner includes determining, after the first corner of the input document has been established and a scan line of image data containing an edge of the input document is detected, if the generated trailing edge data is greater than a second threshold value, determining if the generated trailing edge data represents a corner when it is determined that the generated trailing edge data is greater than the second threshold value, and establishing the third corner of the input document based on the generated trailing edge data when it is determined that the generated trailing edge data represents a corner.

Lastly, as set forth in newly added independent claim 32, the method establishes, when the generated trailing edge data is less than the second threshold value and the generated leading edge data is greater than the first threshold value, a fourth corner of the input document, after the first corner of the input document has been established and a scan line of image data containing an edge of the input document is detected, based upon current generated edge data.

In formulating the rejection, the Examiner alleges that Kelly et al. discloses all the elements of the presently claimed invention. More specifically, the Examiner alleges that Kelly et al. discloses the generation of edge data from a transition point of the input image document into the optical path; the determination of a page width value of the input document from values obtained from sensors which are set prior to the feeding of the input document into the scanning area; the setting of a video-image coordinate value representing one corner of the input document; the continuation of receiving image data such that a center coordinate value of the input document can be determined; the creation of a first white fill area; the determination of a second physical corner of the input document is detected; determining a skew angle of the input document and the undetected corners; and generating an output image. From these

allegations, the Examiner concludes that the presently claimed invention is anticipated by the teachings of Kelly et al. These allegations and conclusion are respectfully traversed.

With respect to the teachings of Kelly et al., a scanner uses edge data to detect two corners of an input document and the skew of the document. From these values, Kelly et al. teaches that the two remaining corners of the input document are calculated based upon an assumption of the document's size.

In contrast, the presently claimed invention, as set forth in independent claim 32, indicates that all four corners are established from the generated edge data.

More specifically, as set forth in independent claim 32, the present invention establishes, when a scan line of image data containing an edge of the input document is detected and no corner of the input document has been established, a first corner of the input document based on the generated leading edge data and trailing edge data corresponding to the scan line of image data containing an edge of the input document.

The present invention, as set forth in independent claim 32, also establishes the second corner by determining, after the first corner of the input document has been established and a scan line of image data containing an edge of the input document is detected, if the generated leading edge data is less than a first threshold value, determining if the generated leading edge data represents a corner when it is determined that the generated leading edge data is less than the first threshold value, and establishing the second corner of the input document based on the generated leading edge data when it is determined that the generated leading edge data represents a corner.

Furthermore, as set forth in independent claim 32, the present invention establishes the third corner by determining, after the first corner of the input document has been established and a scan line of image data containing an edge of the input document is detected, if the generated trailing edge data is greater than a second threshold value, determining if the generated trailing edge data represents a corner when it is determined that the generated trailing edge data is greater than the second threshold value, and establishing the third corner

of the input document based on the generated trailing edge data when it is determined that the generated trailing edge data represents a corner.

Lastly, as set forth in independent claim 32, the present invention establishes, when the generated trailing edge data is less than the second threshold value and the generated leading edge data is greater than the first threshold value, a fourth corner of the input document, after the first corner of the input document has been established and a scan line of image data containing an edge of the input document is detected, based upon current generated edge data.

Kelly et al. fails to teach or suggest:

(1) establishing all four corners from the generated edge data;

(2) establishing, when a scan line of image data containing an edge of the input document is detected and no corner of the input document has been established, a first corner of the input document based on the generated leading edge data and trailing edge data corresponding to the scan line of image data containing an edge of the input document;

(3) establishing the second corner by determining, after the first corner of the input document has been established and a scan line of image data containing an edge of the input document is detected, if the generated leading edge data is less than a first threshold value, determining if the generated leading edge data represents a corner when it is determined that the generated leading edge data is less than the first threshold value, and establishing the second corner of the input document based on the generated leading edge data when it is determined that the generated leading edge data represents a corner;

(4) establishing the third corner by determining, after the first corner of the input document has been established and a scan line of image data containing an edge of the input document is detected, if the generated trailing edge data is greater than a second threshold value, determining if the generated trailing edge data represents a corner when it is determined that the generated trailing edge

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data is greater than the second threshold value, and establishing the third corner of the input document based on the generated trailing edge data when it is determined that the generated trailing edge data represents a corner; and

(5) establishing, when the generated trailing edge data is less than the second threshold value and the generated leading edge data is greater than the first threshold value, a fourth corner of the input document, after the first corner of the input document has been established and a scan line of image data containing an edge of the input document is detected, based upon current generated edge data.

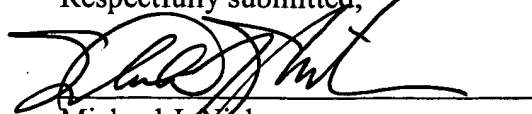
With respect to dependent claims 33-39, the Applicants, for the sake of brevity, will not address the reasons supporting patentability for each of these individual dependent claims, as these claims depend directly or indirectly from allowable independent claim 32. The Applicants reserve the right to address the patentability of these dependent claims at a later time, should it be necessary.

Accordingly, in view of all the amendments and reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. §102(b).

CONCLUSION

Accordingly, in view of all the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw all the present rejections. Also, an early indication of allowability is earnestly solicited.

Respectfully submitted,



Michael J. Nickerson
Registration No. 33,265
Basch & Nickerson LLP
1777 Penfield Road
Penfield, New York 14526
Telephone: (585) 899-3970

MJN/mjn

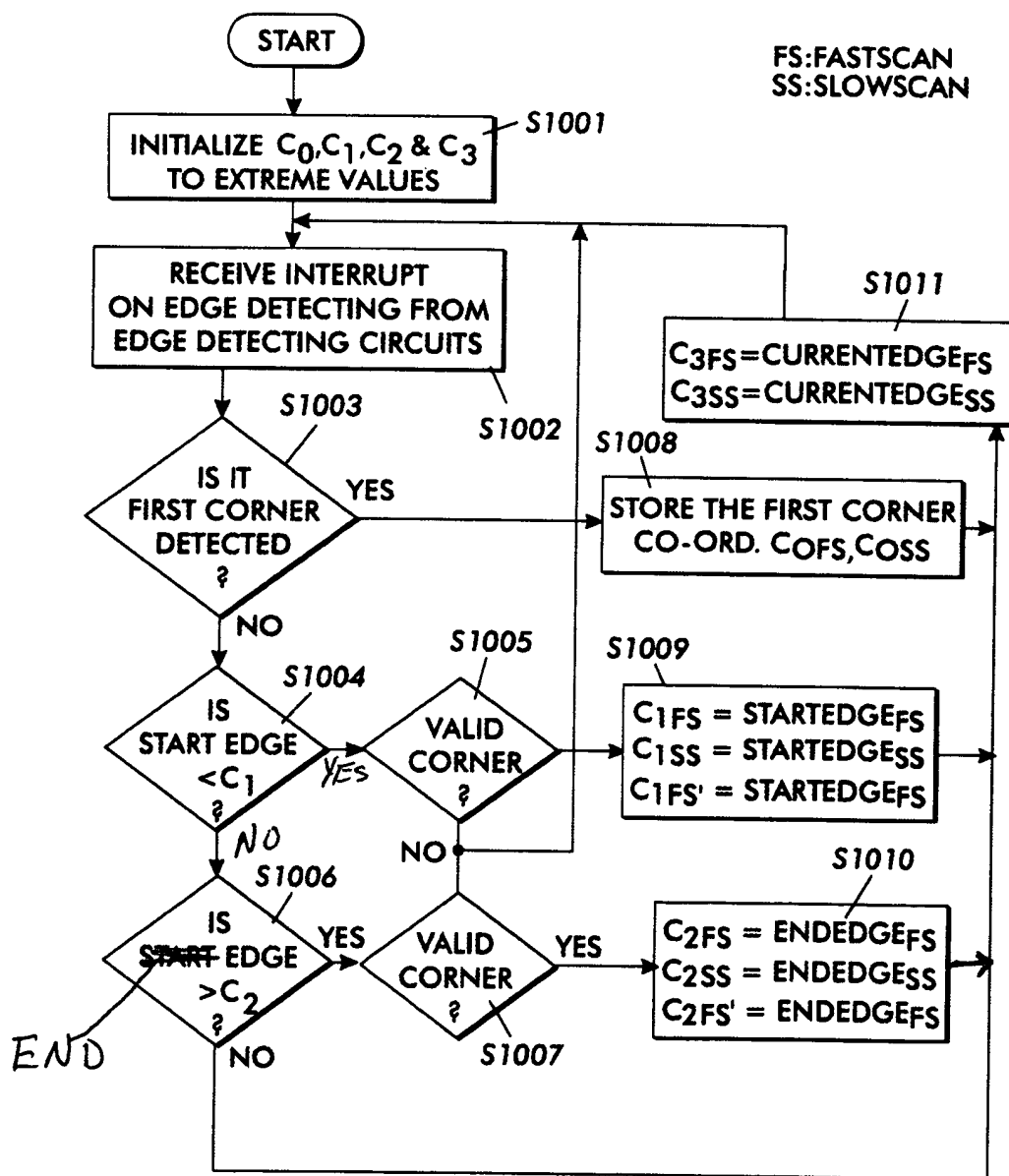


FIG. 8